User Manual RIGOL

Publication number DS1-010133
May. 2006

UltraScope For DS1000 Series

Product Description

UltraScope Software introduces a family of Windows 95, 98, 2000, NT, and Windows XP applications that connect your RIGOL DS1000 series oscilloscopes to your PC desktop by USB or RS-232 .

The UltraScope software provides the following control and analysis features:

- Use Data Browser to display captured waveforms, data and measurements.
- Use DSO Controller to control the oscilloscope locally or over the network.
- Export the waveform by “BMP” format.
- Save the data into “TXT” or “EXCEL” file for analysis.
- Print the waveforms.

System Requirements

To install and run UltraScope software, you must have an IBM-compatible PC with the following installed:

- Microsoft Windows 95, 98, NT 4.0, 2000, or Windows XP
- 16 MB RAM or greater recommended
- CD-ROM drive, 4X or better
- Super VGA monitor or better
- 10 MB of disk space
- Available RS-232 COM port

You must have a DS1000 series oscilloscope and the firmware version must be higher or equal to 01.02.22 . To connect to PC, the oscilloscope must install USB dirver or have an available RS-232 COM port.

Contents

This manual is the user guide for the Ultrascope software, and it contains four chapters.

Chapter 1: Installation and Uninstallation

This chapter guides you install or uninstall the software.

Chapter 2: Operating the Ultrascope

This chapter introduces how to use Ultrascope software in detail.

Chapter 3: Prompting messages and Troubleshooting

This chapter gives solutions to frequently encountered problems or failures when testing. And it lists all the system prompting messages and their meanings.

Chapter 4: Support & Service

This chapter contains service information for Ultrascope.

List

Chapter 1: Installation and Uninstallation

This section describes how to install Ultrascope software on your computer.

Installing Ultrascope Software

Follow the steps below to install Ultrascope software.

1. Insert the CD-ROM into the CD-ROM drive. Run the *Ultrascope for DS1000 Series.EXE* file to start the installation wizard.
2. The Welcome to Ultrascope dialog appears. Read the information in the dialog, and click Next.
3. Select to accept the terms in the License Agreement dialog, and click Next.
4. The Customer Information dialog appears. Read or edit the information in the dialog, and Click Next.
5. Click Install to start installation. After all the files have been installed, the Finish button appears.
6. Click Finish to complete the installation process.

Uninstallation

To uninstall Ultrascope for DS1000 Series Oscilloscopes, you can click by the follow steps: Start-> Program -> Ultrascope for DS1000 Series->Uninstall. Or use the Add/Remove program in the Microsoft Windows Control Panel .
Both uninstall methods activate the Uninstall wizard, which takes you through the uninstall process for Ultrascope.

Chapter 2: Operating the Ultrascope

This chapter covers the following topics:

- Description of the user interface
- Description of the software menu
- Description of the Toolbar
- How to use DSO Controller
- How to use Data Browser
- How to use Virtual Keyboard
- How to set up General Options

Description of the user interface

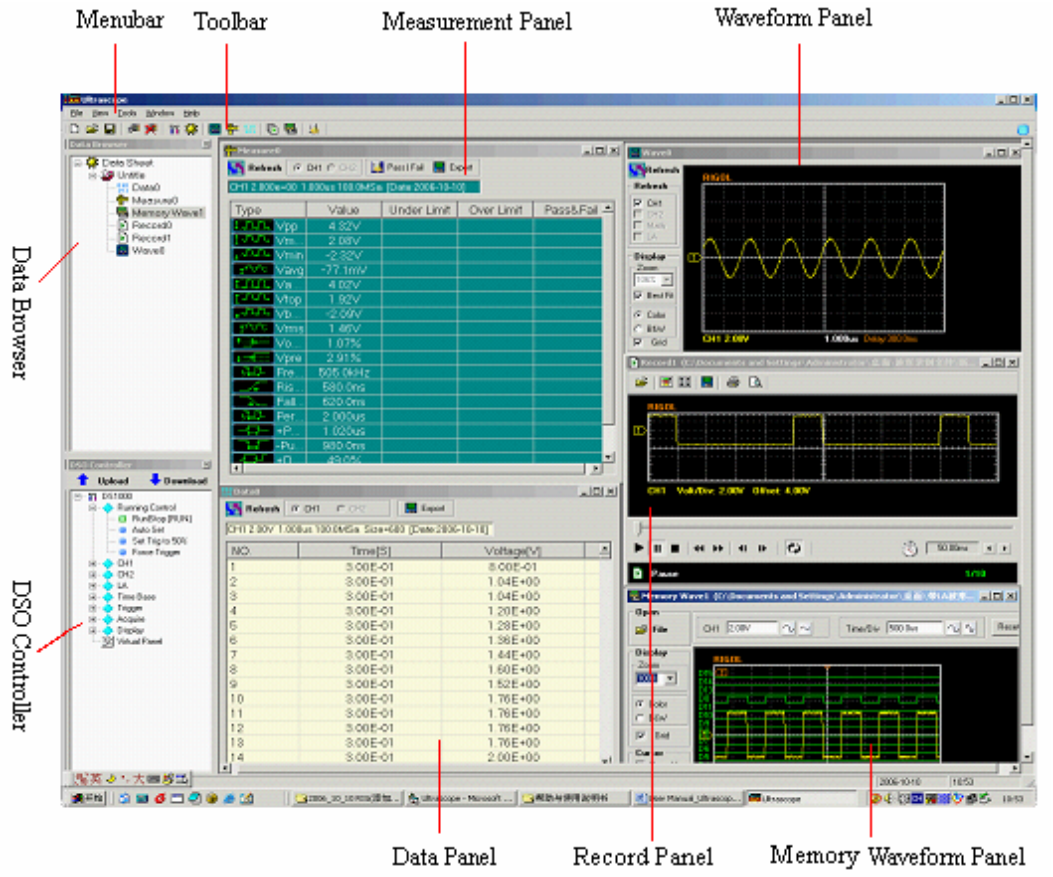


Figure 1: Software interface

Description of the software menu

1. ***File***

New:	To create a new document of Data Sheet, Controller, Waveform, Measure or Wave Data.
Open:	Opens a dialog box that lets you open a Data Sheet or a DSO Controller file.
Save Data Sheet:	Saves the Data Sheet to its current directory and file name.
Save Controller:	Saves the DSO Controller to its current directory and file name.
Save All:	Saves all files
Page Setup:	Setups page attributes before printing
Exit:	Exits Ultrascope

2. ***View***

Toolbar:	Turns the toolbar on and off
Status Bar:	Turns the status bar on and off
Show Controller:	Turns the DSO Controller on and off
Show Data Browser:	Turns the Data Browser on and off

3. ***Tools***

Connect to Oscilloscope:	Connects PC to the oscilloscope
Disconnect:	Disconnects the link between PC and the oscilloscope
Options:	I/O settings and general settings
License Setup:	Register the Ultrascope

4. ***Window***

Cascade:	Stacks open windows in a diagonal overlap, starting from the upper left corner of the data browser window.
Tile Horizontal:	Resizes open windows in the data browser window so that all windows are displayed horizontally.
Tile Vertical:	Resizes open windows in the data browser window so that all windows are displayed vertically.
Arrange Icons:	To arrange icons

5. Help

Contents…:	Displays the table of contents for the help.
About:	Copyright Information

Description of the Toolbar

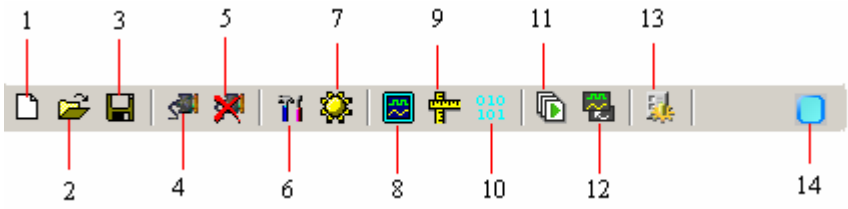


Figure 2: Tool Bar

1(New): To create a new document of Data Sheet, Controller, Waveform, Measure or Wave Data.

2(Open): To open a document of Data Sheet or Controller

3(Save All): To save all files

4(Connect to Oscilloscope): Connect PC to the oscilloscope

5(Disconnect): Disconnect the link between PC and the oscilloscope

6(DSO Controller): Show the DSO Controller window

7(Data Browser): Open or close the Data Browser window

8(Add New Waveform): Add new waveform window

9(Add New Measure): Add new measure window

10(Add New Data): Add new data window

11(Add New Record): Add new record window

12(Add New Memory Waveform): Add new memory waveform window

13(Options): I/O settings and general settings

14(Connection Status Lamp): The lamp will turn blue in connecting status, and it will turn red after disconnect the link between PC and Oscilloscope.

Note: *After connecting the PC to the oscilloscope, the keys and knobs on the front panel will be locked. To activate the front panel control, you must disconnect the link in Ultrascope software or pressing the FORCE key on the front panel.*

How to use DSO Controller

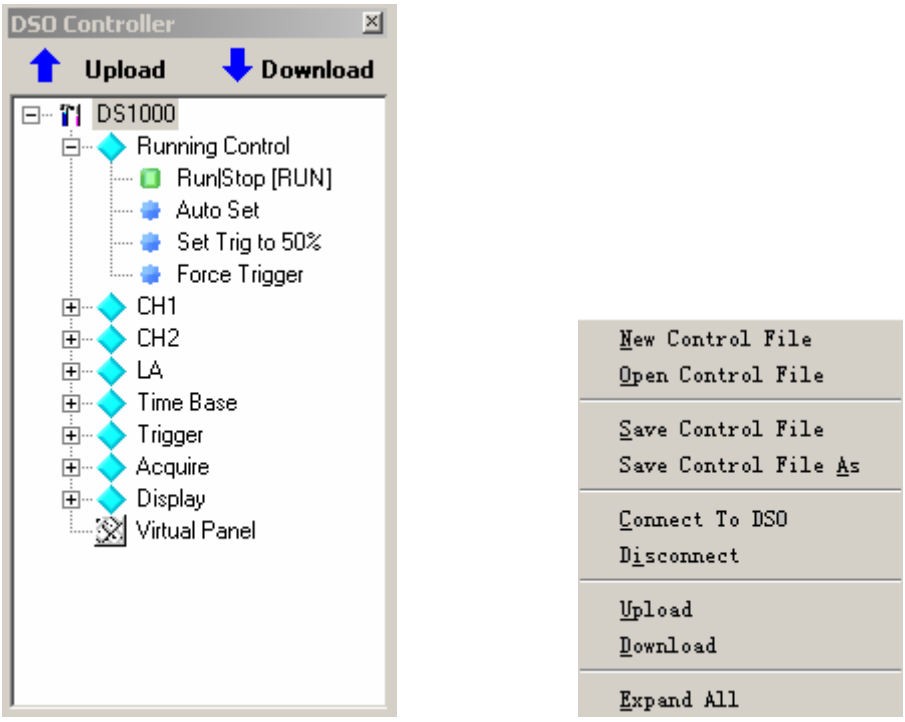


Figure 3: The Explorer View and Menu of DSO Controller

The DSO Controller consists of an Explorer View and a Shortcut Menu. The following illustration descripts each component of the DSO Controller.

Explorer View

The Explorer view lists the instrument and its settings, controls, and virtual keyboard in a Windows Explorer-like tree diagram.

To display the contents of an Explorer view subtree, click on the plus icon next to an item you want to explore. To close a subtree, click on the minus icon next to the subtree. The lowest-level subtrees generally represent the scope control that you can setup or execute.

Download & Upload

You could click the Upload button to transfer parameters to your oscilloscope, and you can get these parameters by pressing the Download button.

Shortcut Menu

The Shortcut menu contains commands and settings available in DSO Controller. You could access the menu by right-click on an icon.

New Control File:	Creates a new document for DSO Controller.
Open Control File:	Opens a dialog box that lets you open a DSO Controller file.
Save Control File:	Saves the DSO Controller to its current directory and file name.
Save Control File As:	Opens a dialog box that lets you save a DSO Controller file.
Connect To DSO:	Connect PC to the oscilloscope.
Disconnect:	Disconnect the link between PC and the oscilloscope.
Upload:	Upload the settings and parameters from DSO Controller to the oscilloscope.
Download:	Download the settings and parameters from the oscilloscope to DSO Controller.
Expand All:	Expand the Explorer View to display the lowest-level subtrees

Instant Running Control

On the DSO Controller panel, the "Running Control" subtree includes four instant action keys. (See Figure 4)

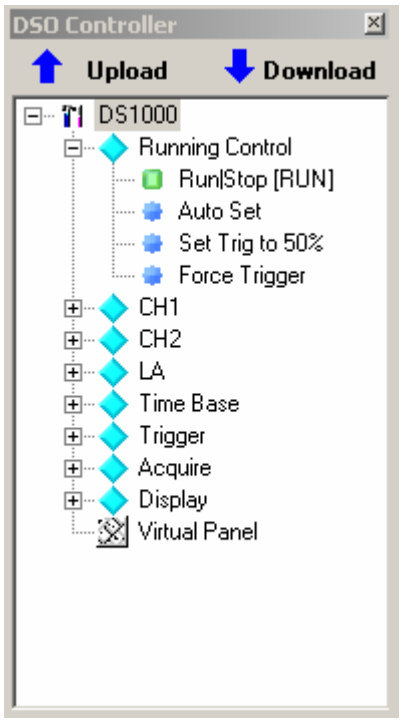


Figure 4

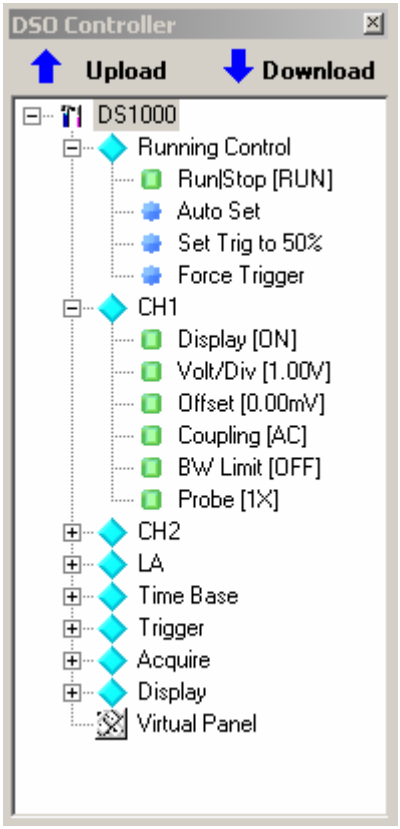
Double-click "Run|Stop" to pop up a dialogue box, you could select "RUN" or "STOP" to let the instrument run or stop.

Double-click the other three action keys to execute the "Autoset", "Set Trig to 50%" or "Force Trigger" actions instantly.

Use DSO Controller to set up CH1& CH2

You can set up the parameters of channel 1 or channel 2 at “CH1”, “CH2” subtrees on DSO Controller panel.

Figure 5



Double-click the lowest subtrees to pop up a list, you could select a value and set the instrument to use that value.

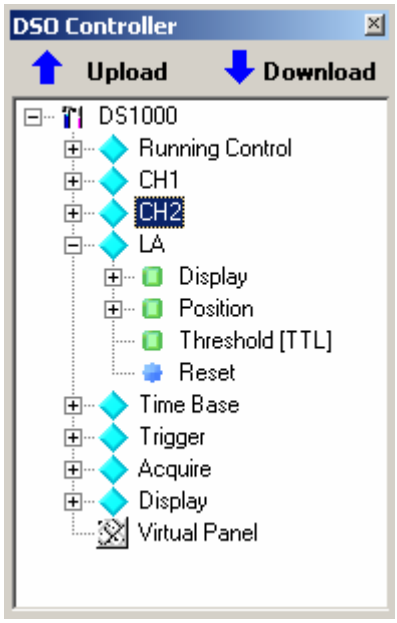
Table 1:

Subtree	Settings	Comments
Display	ON OFF	Select “ON” to display the channel Select “OFF” to close the channel
Volt/Div	2.00mV~ 5.00V	Select the Volt/Div value within the range of 2.00mV~ 5.00V
Offset	-40.00V~+40.00V (Volt/Div> 100mV) -2.00V ~ +2.00V (Volt/Div<200mV)	Select the vertical offset value
Coupling	AC DC	Set to “AC” coupling Set to “DC” coupling
BW Limit	ON OFF	Limits the bandwidth to reduce display noise. To set “OFF” will get full bandwidth.
Probe	1X 10X 100X 1000X	Set this to match your probe attenuation factor to make the vertical scale readout correct

Use DSO Controller to set up LA(Mixed-Signal Oscilloscope)

You can set up the parameters of digital channels at "LA" subtrees on DSO Controller panel..

Figure 6



Double-click the lowest subtrees or the second-subtrees to pop up a list, you could select a value and set the instrument to use that value.

Table 2:

Subtree	Second-subtree	Settings	Comments
Dipslay	D15-D0	ON OFF	Turn on or turn off single channel of D15-D0.
Position	D15-D0	0-15	Select the vertical position of the channel D15-D0.
Threshold		TTL CMOS ECL User	Select style of whole digital channel. The threshold voltage can set by user in user-defined style.
Reset			Reset waveform of the channel D15-D0.

Use DSO Controller to set up Time Base

You could set up the horizontal parameters of the oscilloscope at the “Time Base” subtree on DSO Controller panel. When the trigger mode is not Alternative, you can set up the value as below figure and table .(See Figure 7)

Figure 7

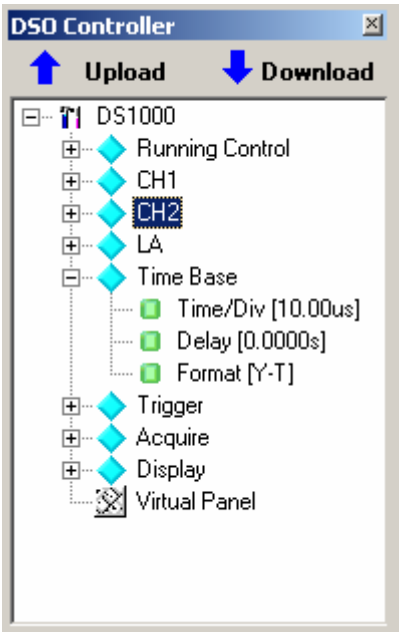


Table 3:

Subtree	Settings	Comments
Time/Div	5ns～50s	Select the timebase of CH1 from 5ns to 50s
Delay		Display the delay value
Format	Y-T X-Y Roll	Select to Y-T format Select to X-Y format Select to Roll format

When the trigger mode is Alternative, you can set up the value as below figure and table.

Figure 8

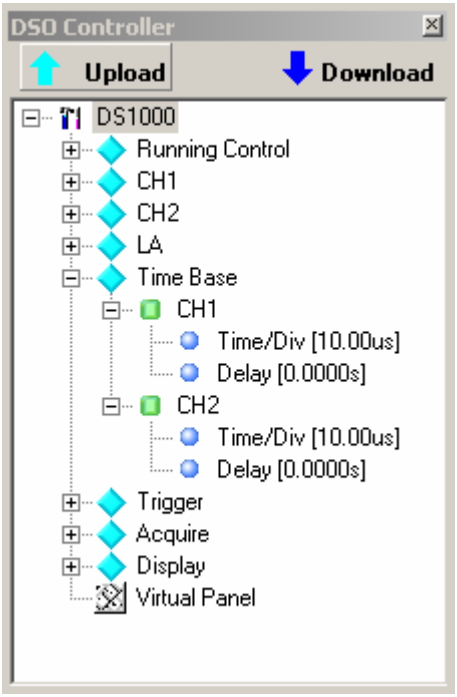


Table 4:

Subtree	Second-subtree	Settings	Comments
CH1	Time/Div	5ns～50s	Select the timebase of CH1 from 5ns to 50s
	Delay		Display the delay value of CH1
CH2	Time/Div	5ns～50s	Select the timebase of CH2 from 5ns to 50s
	Delay		Display the delay value of CH2

Use DSO Controller to set up Trigger System

You could set up the trigger system of the oscilloscope at the "Trigger" subtree on DSO Controller panel.

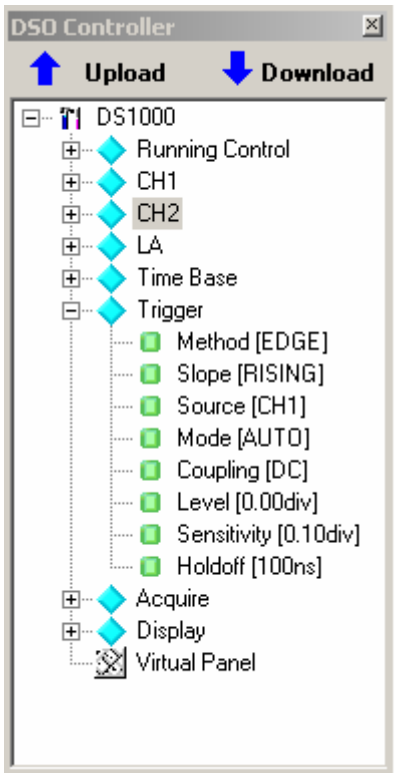


Figure 9: Edge Trigger

Table 5: Edge Trigger

Subtree	Settings	Comments
Method	EDGE PULSE VIDEO SLOPE ALTERNATIVE PATTERN DURATION	Select trigger mode as “EDGE” Select trigger mode as “PULSE” Select trigger mode as “VIDEO” Select trigger mode as “SLOPE” Select trigger mode as “ALTERNATIVE” Select trigger mode as “PATTERN” Select trigger mode as “DURATION”
Source	CH1 CH2 EXT EXT5 AC D15-D0	Select the input source as the trigger signal EXT and EXT5 use the signal applied to the EXT TRIG connector as the source. Select any digital channel in D15-D0 as trigger source (only in mixed-signal oscilloscope).
Slope	RISING FALLING BOTH	Select to trigger on the rising, falling or both edge of the signal
Mode	AUTO NORMAL SINGLE	Select the type of triggering
Coupling	DC AC HF LF	Selects the components of the trigger signal applied to the trigger circuitry
Level	-12.00div to +12.00div	Set the trigger level from -12.00div to +12.00div
Sensitivity	0.10div to 1.00div	Set the trigger sensitivity from 0.10div to 1.00div
Holdoff	100ns ~ 1.5s	Select the holdoff time from 100ns to 1.5s

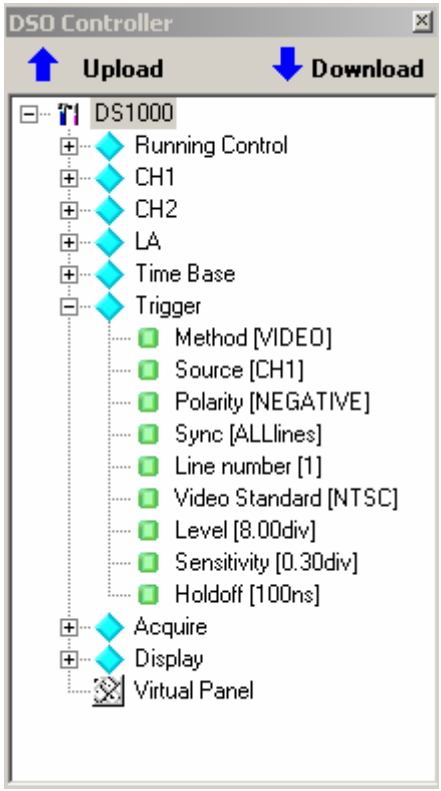


Figure 10: Video Trigger

Table 6: Video Trigger

Subtree	Settings	Comments
Source	CH1 CH2 EXT EXT5	Select the input source as the trigger signal EXT and EXT5 use the signal applied to the EXT TRIG connector as the source
Polarity	POSITIVE NEGATIVE	Normal triggers on the negative edge of the sync pulse and inverted triggers on the positive edge of the sync pulse
Sync	All line	Select to trigger on all lines
	Line num	Select to trigger on the specified line
	Odd Field	Select to trigger on odd field
	Even Field	Select to trigger on even field
Line number	1 ~ 525/625	Select the trigger line number
Video Standard	NTSC PAL/SECAM	Select the video standard for sync and the number count
Level	-12.00div to +12.00div	Set the trigger level from -12.00div to +12.00div
Sensitivity	0.10div to 1.00div	Set the trigger sensitivity from 0.10div to 1.00div
Holdoff	100ns ~ 1.5s	Select the holdoff time from 100ns to 1.5s

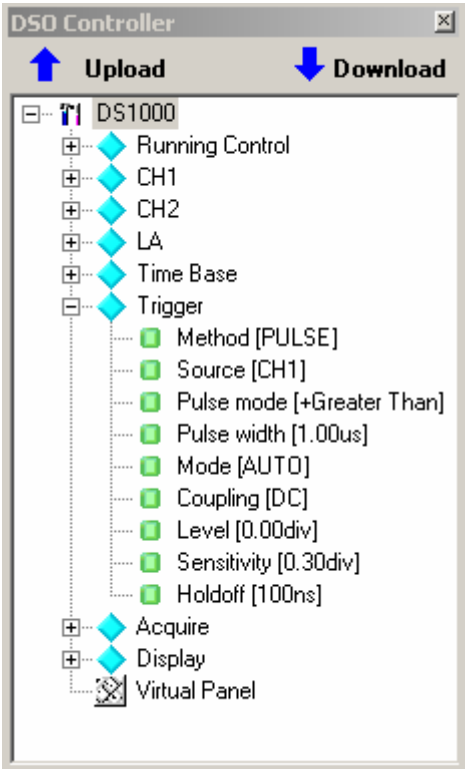


Figure 11: Pulse Trigger

Table 7: Pulse Trigger

Subtree	Settings	Comments
Source	CH1 CH2 EXT EXT5 D15-D0	Select the input source as the trigger signal EXT and EXT5 use the signal applied to the EXT TRIG connector as the source. Select any digital channel in D15-D0 as trigger source (only in mixed-signal oscilloscope).
Pulse mode	+Less Than +Greater Than +Equal -Less Than -Greater Than -Equal	Select how to compare the trigger pulse.
Pulse width	20ns ~ 10s	Select the pulse width from 20ns to 10s
Mode	AUTO NORMAL SINGLE	Select the type of triggering
Coupling	DC AC HF LF	Selects the components of the trigger signal applied to the trigger circuitry
Level	-12.00div to +12.00div	Set the trigger level from -12.00div to +12.00div
Sensitivity	0.10div to 1.00div	Set the trigger sensitivity from 0.10div to 1.00div
Holdoff	100ns ~ 1.5s	Select the holdoff time from 100ns to 1.5s

Note: *The change of trigger methods will make the trigger subtrees different.*

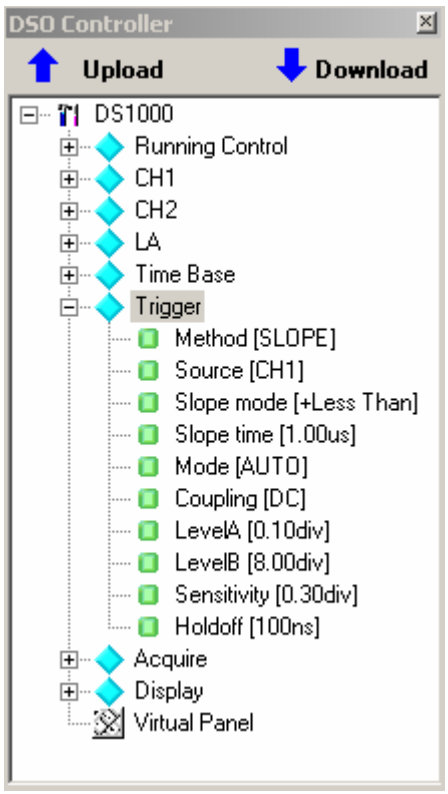


Figure 12: Slope Trigger

Table 8: Slope Trigger

Subtree	Settings	Comments
Source	CH1 CH2 EXT EXT5	Select the input source as the trigger signal EXT and EXT5 use the signal applied to the EXT TRIG connector as the source
Slope mode	+Less Than +Greater Than +Equal -Less Than -Greater Than -Equal	Set the slope condition
Slope time	20ns ~ 10s	Select the slope time from 20ns to 10s
Mode	AUTO NORMAL SINGLE	Select the type of triggering
Coupling	DC AC HF LF	Selects the components of the trigger signal applied to the trigger circuitry
LevelA LevelB	-12.00div to +12.00div	Set the trigger levelA or levelB from -12.00div to +12.00div
Sensitivity	0.10div to 1.00div	Set the trigger sensitivity from 0.10div to 1.00div
Holdoff	100ns ~ 1.5s	Select the holdoff time from 100ns to 1.5s

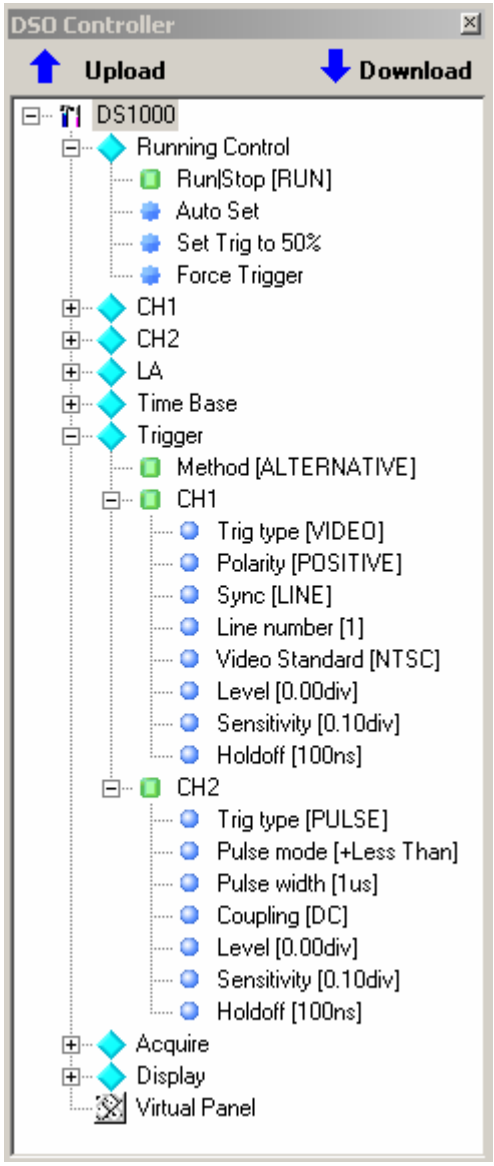


Figure 13: Alternative Trigger

Table 9: Alternative Trigger

Subtree	Second-subtree	Settings	Comments
CH1	Trig type	EDGE PULSE VIDEO SLOPE	Select trigger mode as “EDGE” Select trigger mode as “PULSE” Select trigger mode as “VIDEO” Select trigger mode as “SLOPE”
	Different Second-subtrees		The change of trigger type will make the trigger second-subtrees different
CH2	Trig type	EDGE PULSE VIDEO SLOPE	Select trigger mode as “EDGE” Select trigger mode as “PULSE” Select trigger mode as “VIDEO” Select trigger mode as “SLOPE”
	Different Second-subtrees		The change of trigger type will make the trigger second-subtrees different

Note: *The change of trig type will make the alternative trigger second-subtrees different.*

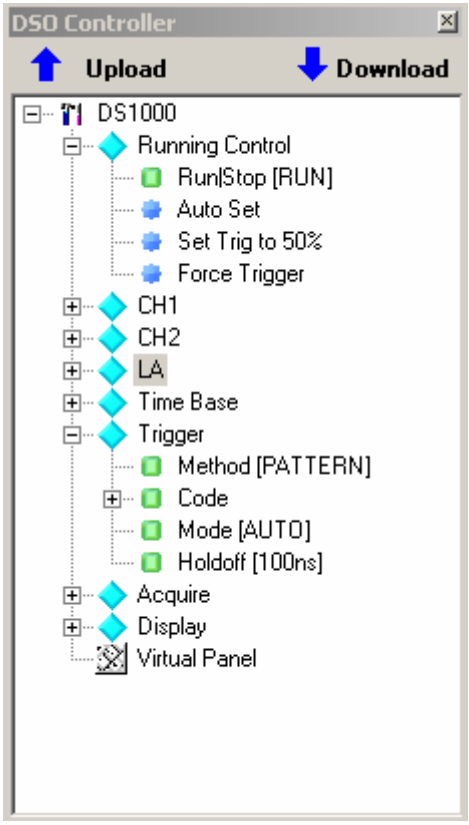


Figure 14: Pattern Trigger(Mixed-Signal Oscilloscope)

Table 10: Pattern Trigger

Subtree	Second-subtree	Settings	Comments
Code	D15-D0	H L X Rising Falling	Set the pattern on the digital channels
Mode		AUTO NORMAL SINGLE	Select the type of triggering
Holdoff		100ns ~ 1.5s	Select the holdoff time from 100ns to 1.5s

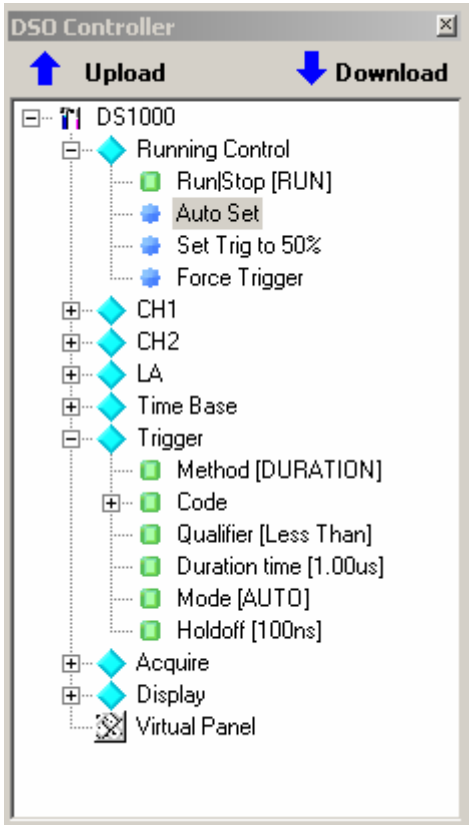


Figure 15: Duration Trigger(Mixed-Signal Oscilloscope)

Table 11: Duration Trigger

Subtree	Second-subtree	Settings	Comments
Code	D15-D0	H L X	Set the pattern on the digital channels
Qualifier		Less Than Greater Than Equal	Set the duration trigger condition
Duration time		20ns ~ 10s	Select the duration time from 20ns to 10s
Mode		AUTO NORMAL SINGLE	Select the type of triggering
Holdoff		100ns ~ 1.5s	Select the holdoff time from 100ns to 1.5s

Use DSO Controller to set up Acquisition System

You could set up the acquisition system of the oscilloscope at the “Acquire” subtree on DSO Controller panel. (See Figure 16)

Figure 16:

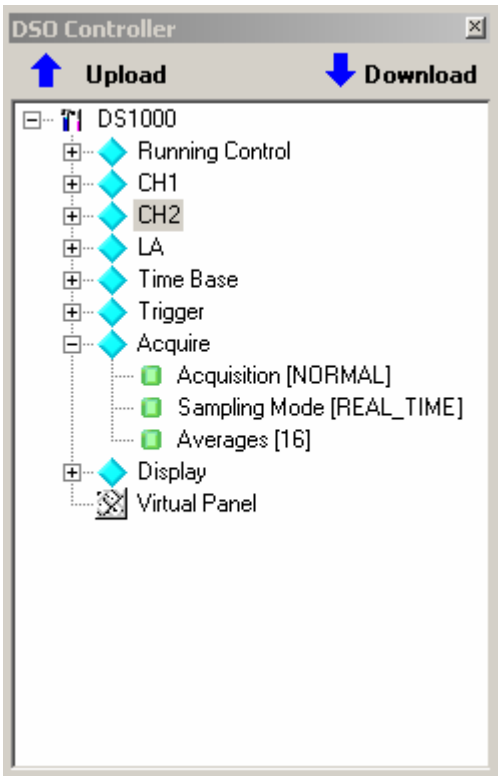


Table 12:

Subtree	Settings	Comments
Acquisition	NORMAL AVERAGE PEAK DETECT	Set to Normal Acquisition mode Set to Average Acquisition mode Set to Peak Detect Acquisition mode
Sampling Mode	REAL-TIME EQU-TIME	Set to Realtime sampling mode Set to Equivalent sampling mode
Averages	2 to 256, step 2	Select Number of Averages from 2 to 256 with the step of 2. The number is only used to the average acquisition mode.

Use DSO Controller to set up Display System

You could set up the display system of the oscilloscope at the "Display" subtree on DSO Controller panel. (See Figure 17)

Figure 17

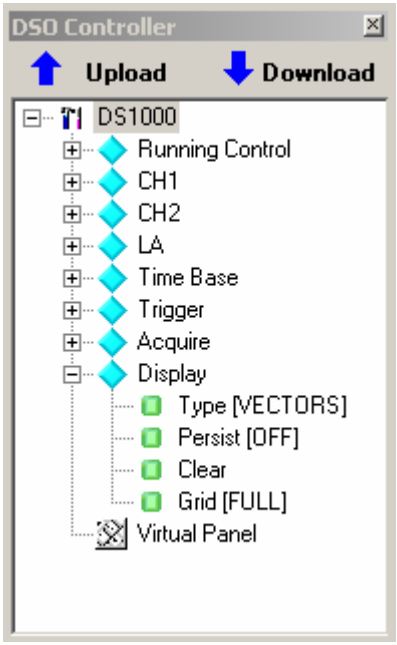


Table 13:

Subtree	Settings	Comments
Type	VECTORS DOT	Vectors fills the space between adjacent sample points in the display Dots displays only the sample points
Persist	ON OFF	Set the sample point remains displayed until turn the persistence "OFF". Turn off the persistence
Clear		Clear all exiting waveform from screen
Grid	FULL HALF NONE	Select the graticule display mode

How to use the Virtual Keyboard

You could double-click the subtree of “Virtual Keyboard” to pop up a panel shown as Figure 18.

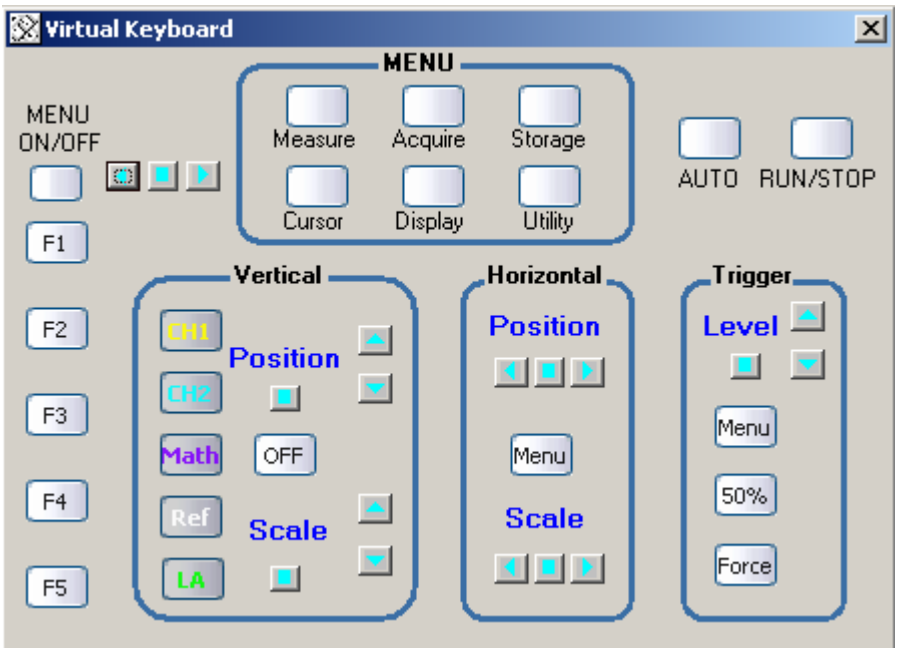


Figure 18: Virtual Keyboard

The virtual keyboard has softkeys in conjunction with the keys and knobs on the front panel of the oscilloscope. The arrangement of the softkeys on the virtual keyboard is the same as those buttons and knobs on the front panel. You can click these softkeys to control the oscilloscope by PC.

How to use Data Browser

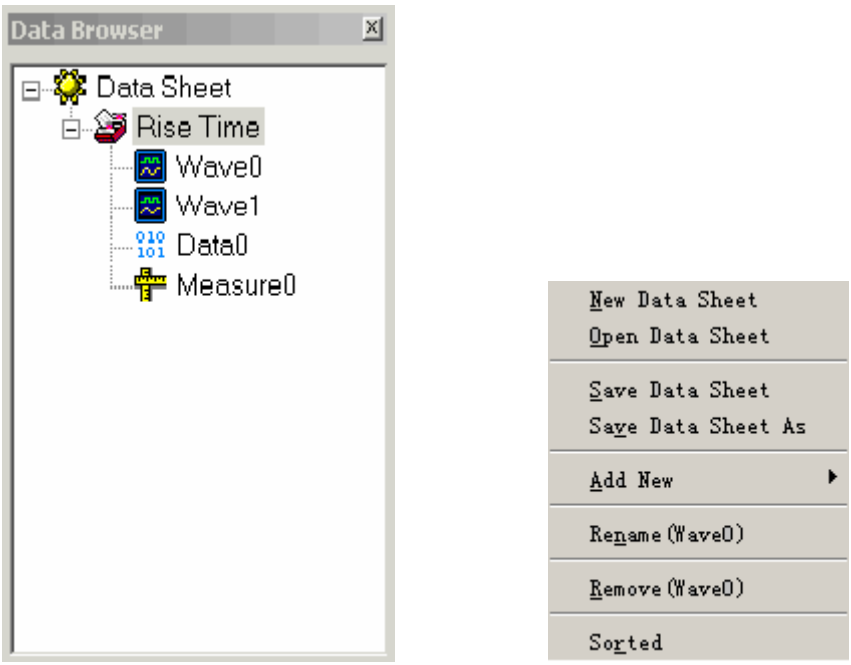


Figure 19: The Data Browser and Shortcut Menu

The Data Browser consists of a Branch View and a Shortcut Menu. The following illustration descripts each component of the Data Browser.

Branch View

The branch view lists the data sheet of waveforms, measures, and data. To display the contents in the data sheet, double click the lowest-level item on the list, and this selected item will be displayed on the right of the main window.

Shortcut Menu

The Shortcut menu contains commands and settings available in Data Browser. You could access the menu by right-click on an icon.

New Data Sheet: Creates a new document for Data Browser.

Open Data Sheet: Opens a dialog box that lets you open a Data Sheet file.

Save Data Sheet: Saves the Data Sheet to its current directory and file name.

Save Data Sheet As: Opens a dialog box that lets you save a Data Sheet file.

Add New: Adds a new waveform, measure, data , record or memory waveform window

Rename: Changes the name of the item selected.

Remove: Deletes an item from the data sheet list.

Sorted: Selects to sort the items on the list by name.

How to display a waveform

Add a waveform window:

You could right-click the Data Browser panel to pop-up a shortcut menu, select **Add New-> Waveform** to display a new window.

Remove the waveform window:

Select **Remove** item on the shortcut menu to close the waveform window.

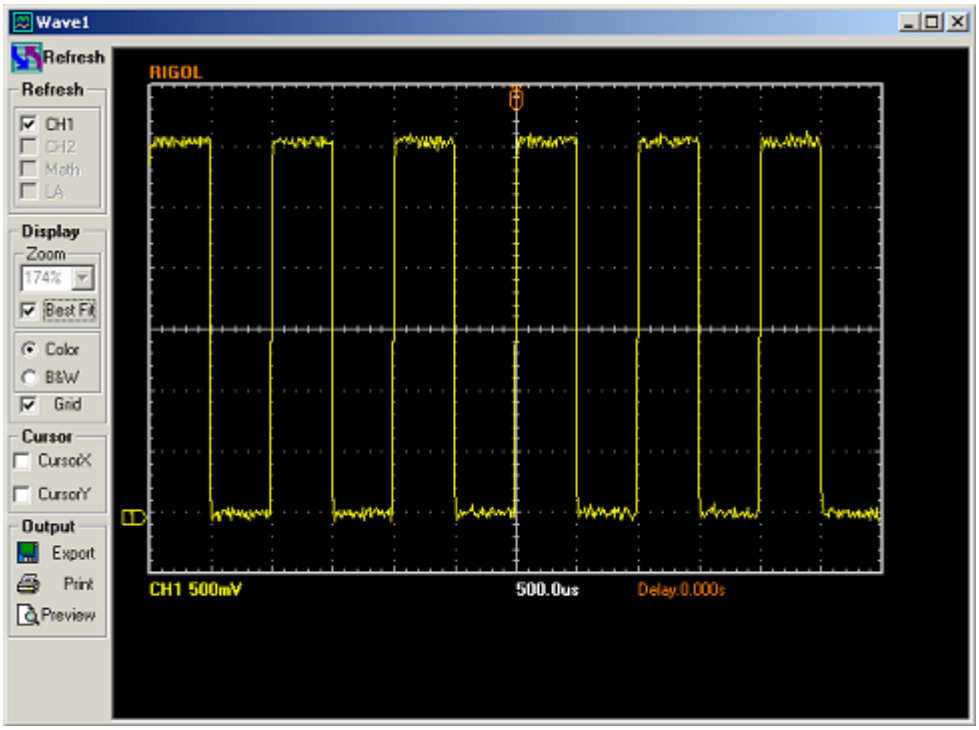


Figure 20: The Waveform Panel

The waveform panel provides waveform display, zooming, storage, and printing for analysis. The following description illuminates how to operate these functions.

Refresh

After you click the **Refresh** button on this panel or press the **F5** key on your PC keyboard, the signal currently on the oscilloscope's screen will be displayed on the waveform window.

You could select CH1, CH2, Math, LA(Mixed-Signal Oscilloscope) or all of them to display the signal connected to channel 1, channel 2, Math, LA(Mixed-Signal Oscilloscope) or all channels. You must open the channel that you want to display in the DSO.

Controller. Otherwise, the selection item in conjunction with this channel will be disabled as gray color.

Display

The panel toolbar contains controls for zooming the waveform, selecting into the **Best Fit** mode, setting the display in **Color** or **B&W** mode, setting the **Grid** ON or OFF.

The percent zoom field displays the current data sheet magnification setting, where 100% is the system-default zoom value. Clicking on the drop-down menu arrow displays a list of magnification values from which you can select. You can also enter numeric values into this field by moving the cursor into the field, and typing in a new value after the **Best Fit** mode disabled.

The **Best Fit** mode fits the graticule to the current window size, allowing you to view the entire graticule.

Output

You could output the waveform by exporting currently displayed window into "BMP" format file to its directory and file name.

Previewing and Printing

To preview and set up printing page of waveform, click the **Preview** button. To print the page directly, just click the **Print** button.

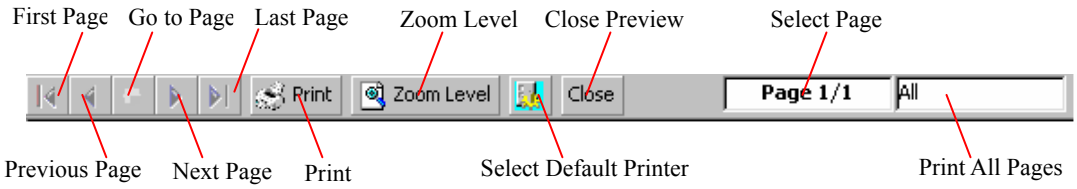


Figure21: Toolbar on the preview page

Sizing, Tiling and Cascading Windows

To scroll data or size the data sheet, use normal windows procedures.

To auto arrange or otherwise manipulate windows or icons, select the appropriate menu items in the Ultrascope Window menu.

How to Measure with Data Browser

Add a measure window:

You could right-click the Data Browser panel to pop-up a shortcut menu, select **Add New-> Measure** to display a new window.

Remove the measure window:

Right-click the measurement branch of the Data Browser to display the shortcut menu and then select **Remove** to close the measure window.

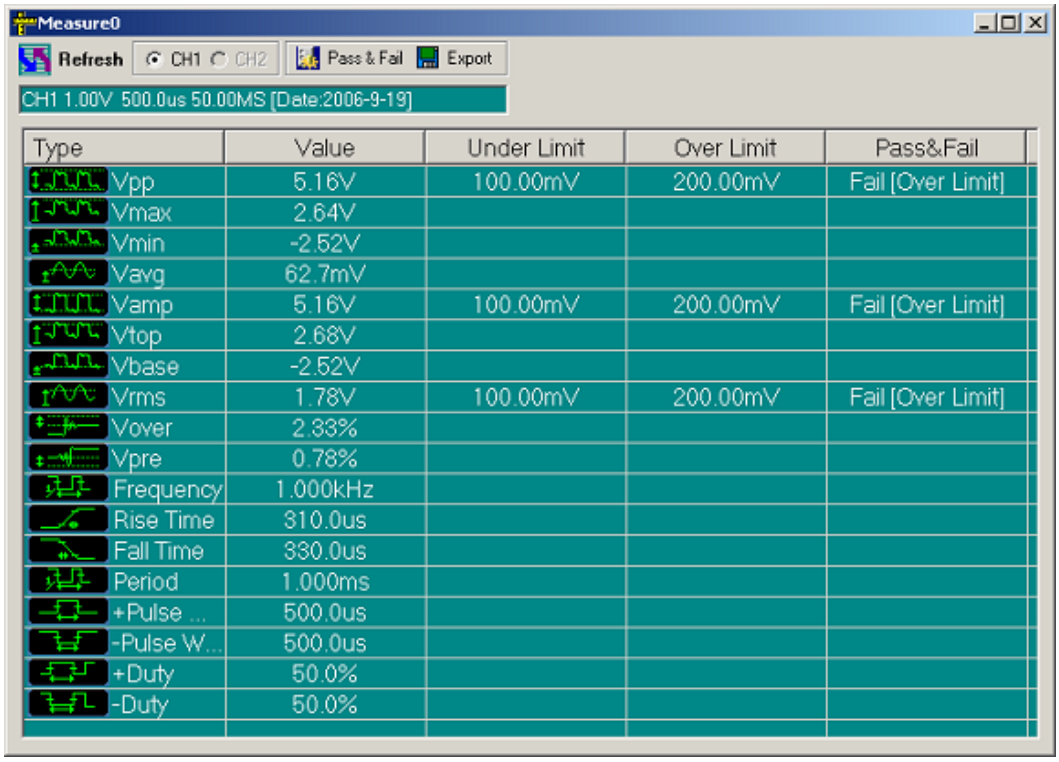


Figure 22: The Measurement Panel

This panel provides 18 parameters for measuring, including Vpp, Vmax, Vmin, Vavg, Vamp, Vtop, Vbase, Vrms, Vover, Vpre, Frequency, Rise Time, Fall Time, Period, +Pulse Width, -Pulse Width,+Duty or -Duty.

The description of the functional buttons on the measurement panel is shown as follows:

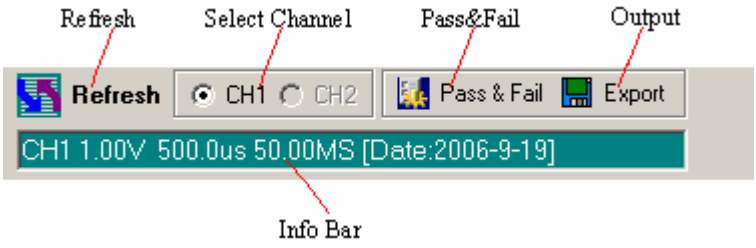


Figure 23: The Control bar on the measurement panel

Refresh

You could get the auto measurement results from the oscilloscope by clicking the **Refresh** button on this panel or pressing the **F5** key on your PC keyboard. The panel will display a list of measurement values for currently selected channel.

CH1, CH2

You could select CH1 or CH2 for measuring the signal connected to channel 1 or channel 2. The oscilloscope must display the channel that you want to measure; you could change this setting in the DSO Controller. If the channel is close, the selection item associated with this channel will be disabled as gray color.

Export

You could save the measurement results as "TXT" or "EXCEL" file in your computer.

Info Bar

This bar displays channel, vertical scale, horizontal scale, sampling rate and date info in conjunction with the waveform for measuring.

Pass & Fail

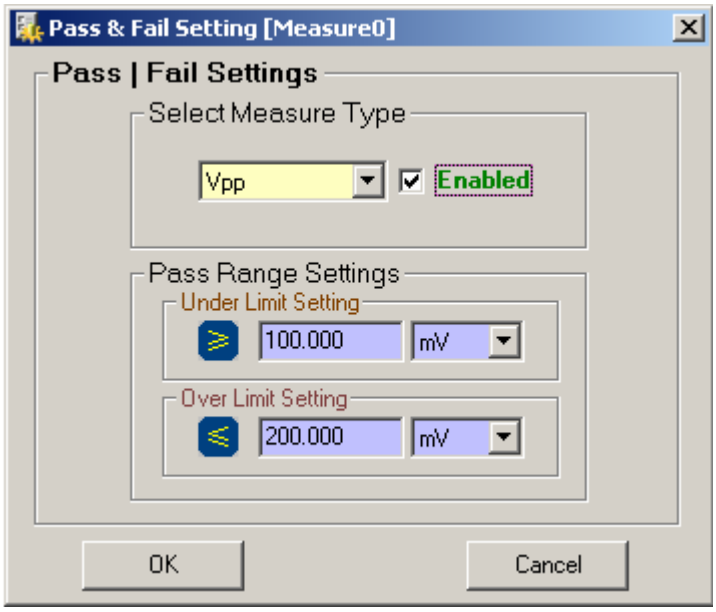


Figure 24: Pass & Fail Setting window

The Ultrascope software enables users to set pass/fail test parameters. These parameters include Vpp, Vmax, Vmin, Vavg, Vamp, Vtop, Vbase, Vrms, Vover, Vpre, Frequency, Rise Time, Fall Time, Period, +Pulse Width, -Pulse Width,+Duty or -Duty.

You could set pass/fail factors range. If the measurement value is out of range, the measurement panel will display test result as “fail”. If the measurement value is under limit, it will show “pass” on the Pass&Fail list in the measurement panel.

To set the range of these pass/fail factors according to the following steps:

1. Select parameters for pass/fail factors from the list, and click to fill “√” in the square block to the right of the list.
2. After enable the parameter, input number and select unit for this parameter to set pass /fail range.

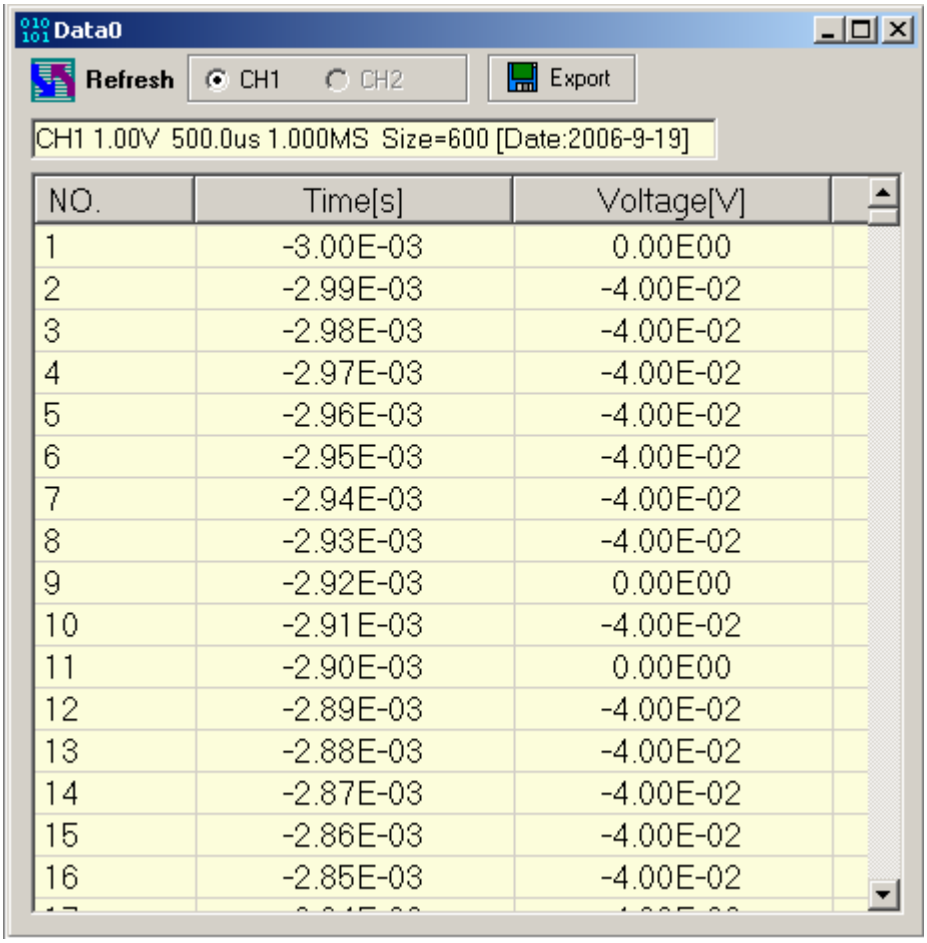
How to get waveform data with Data Browser

Add a data window:

You could right-click the Data Browser panel to pop-up a shortcut menu, select **Add New-> Data** to display a new window.

Remove the data window:

Right-click the data branch of the Data Browser to display the shortcut menu and then select **Remove** to close the data window.



NO.	Time[s]	Voltage[V]
1	-3.00E-03	0.00E00
2	-2.99E-03	-4.00E-02
3	-2.98E-03	-4.00E-02
4	-2.97E-03	-4.00E-02
5	-2.96E-03	-4.00E-02
6	-2.95E-03	-4.00E-02
7	-2.94E-03	-4.00E-02
8	-2.93E-03	-4.00E-02
9	-2.92E-03	0.00E00
10	-2.91E-03	-4.00E-02
11	-2.90E-03	0.00E00
12	-2.89E-03	-4.00E-02
13	-2.88E-03	-4.00E-02
14	-2.87E-03	-4.00E-02
15	-2.86E-03	-4.00E-02
16	-2.85E-03	-4.00E-02

Figure 25: Data window

The data window displays the time and voltage data of the current waveform window on the oscilloscope. These digits are horizontal time values and vertical values of the sampling points.

Data Acquisition Control Bar

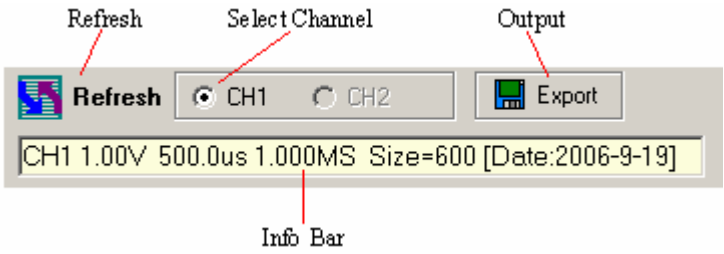


Figure 26: Data Acquisition Control Bar

Refresh

Click the **Refresh** button on the data acquisition control bar or press the **F5** key on your PC keyboard to get the waveform data from the oscilloscope.

CH1, CH2

You could select CH1 or CH2 for downloading the waveform data from channel 1 or channel 2. Notice that you must set the channel for display in the DSO Controller before selecting channels on this data acquisition bar.

Export

The waveform data can be saved as “TXT” or “EXCEL” file in your hard disk for further analysis.

Info Bar

The channels, vertical scale, horizontal scale, sampling rate, record size and date info could be displayed on this info bar.

How to display a record file

Add a record window:

You could right-click the Data Browser panel to pop-up a shortcut menu, select **Add New-> Record** to display a new window.

Remove the record window:

Select **Remove** item on the shortcut menu to close the record window.

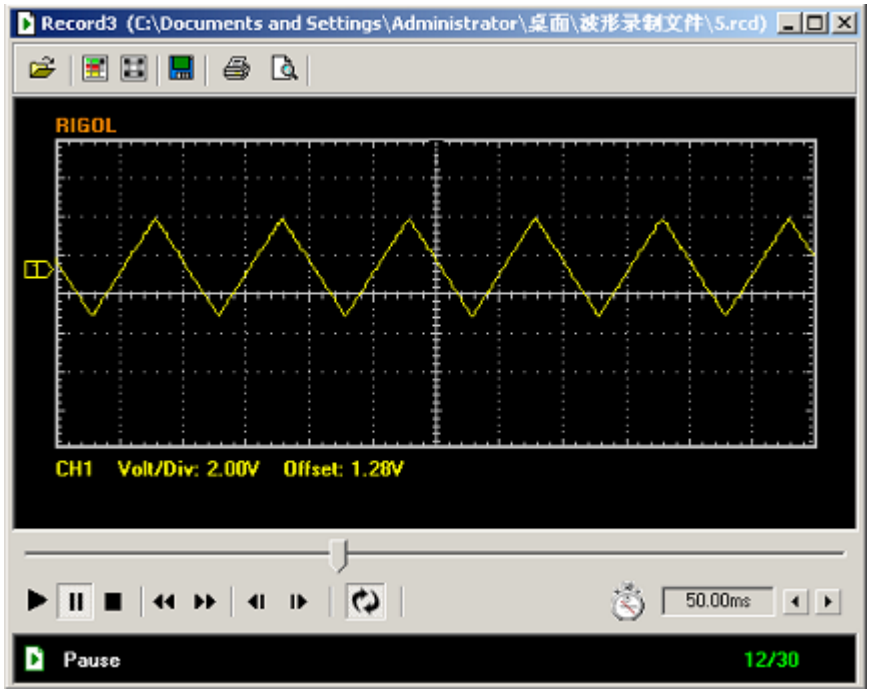


Figure 27: The Record Panel

The record panel provides waveform display, storage, and printing for analysis. The following description illuminates how to operate these functions.

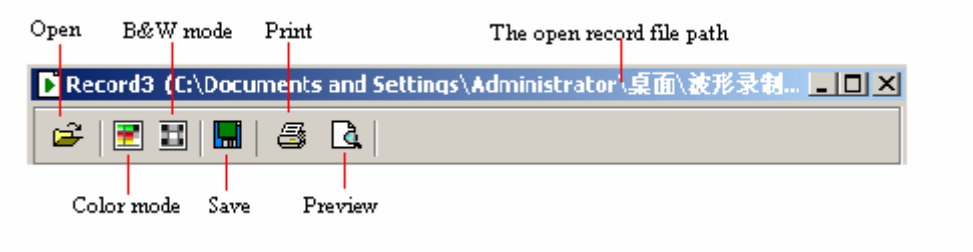


Figure 28: The Record Tool Bar

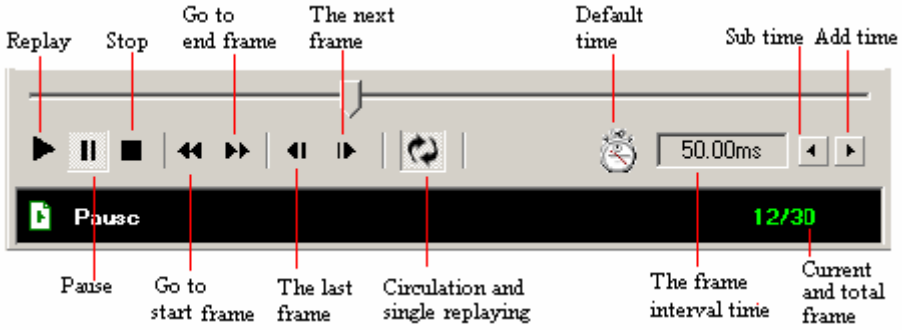


Figure 29: The Record Control Bar

Open

Press to open the record file you have saved. Then the waveform will be play back.

Color or B&W mode

Setting the display in **Color** or **B&W** mode.

Save

You could output the waveform by exporting currently displayed window into “BMP” format file to its directory and file name.

Previewing and Printing

To preview and set up printing page of waveform, click the **Preview** button. To print the page directly, just click the **Print** button.

The open record file path

This message disaply the record file path which you have open.

Replay

The record waveform will be played back in continues.

Pause

Pause the waveform to play back.

Stop

Stop the waveform to play back.

Go to start frame

Press to go to the start frame.

Go to end frame

Press to go to the end frame.

The last frame

Press to go to the last frame.

The next frame

Press to go to the next frame.

Circulation and single replaying

Choosing to circulation or single replaying the record waveform.

Default time

Press to set the frame interval time is 50.00ms.

The frame interval time

This message display the frame interval time.

Current and total frame

This message display the current and total frame.

Sub time

Press to set the frame interval time sub.

Add time

Press to set the frame interval time add.

How to display a memory waveform

Add a memory waveform window:

You could right-click the Data Browser panel to pop-up a shortcut menu, select **Add New-> Memory Waveform** to display a new window.

Remove the memory waveform window:

Select **Remove** item on the shortcut menu to close the memory waveform window.

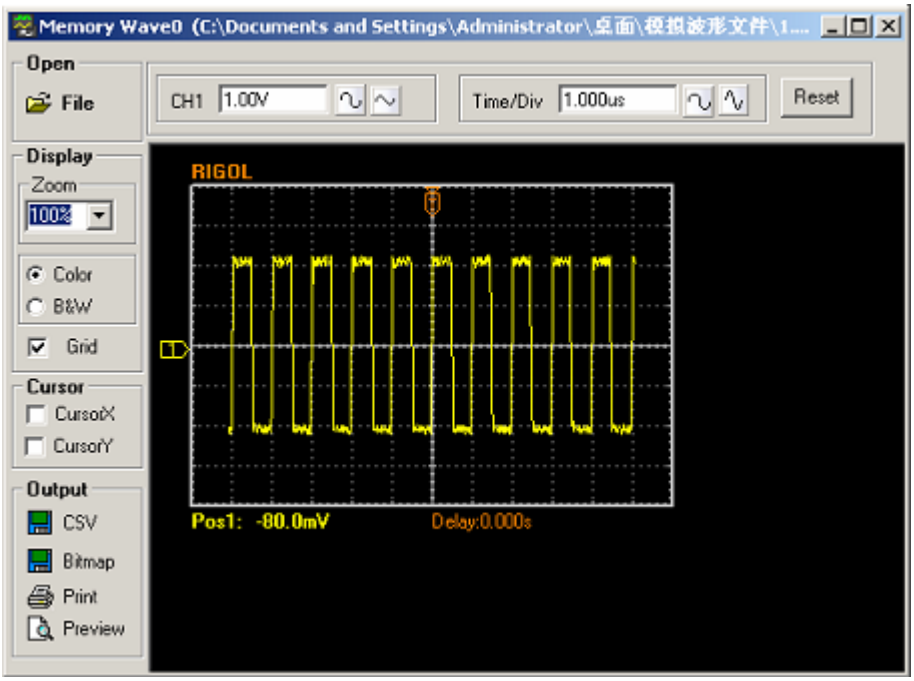


Figure 30: The Memory Waveform Panel

The memory waveform panel provides the saved waveform display, zooming, storage, and printing for analysis. The following description illuminates how to operate these functions.

Open

You can press this button to select the waveform file which you have saved.

Display

The panel toolbar contains controls for zooming the waveform, setting the display in **Color** or **B&W** mode, setting the **Grid** ON or OFF.

The percent zoom field displays the current data sheet magnification setting, where 100% is the system-default zoom value. Clicking on the drop-down menu arrow displays a list of magnification values from which you can select. You can also enter numeric values into this field by moving the cursor into the field.

Output

You could output the waveform by exporting currently displayed window into “BMP” format file or the Memory data into CSV format file to its directory and file name.

Previewing and Printing

To preview and set up printing page of waveform, click the **Preview** button. To print the page directly, just click the **Print** button.

Volt/Div

You can change the volt/div value to zoom the waveform in vertical direction.

Time/Div

You can change the time/div value to zoom the waveform in horizontal direction.

General Options

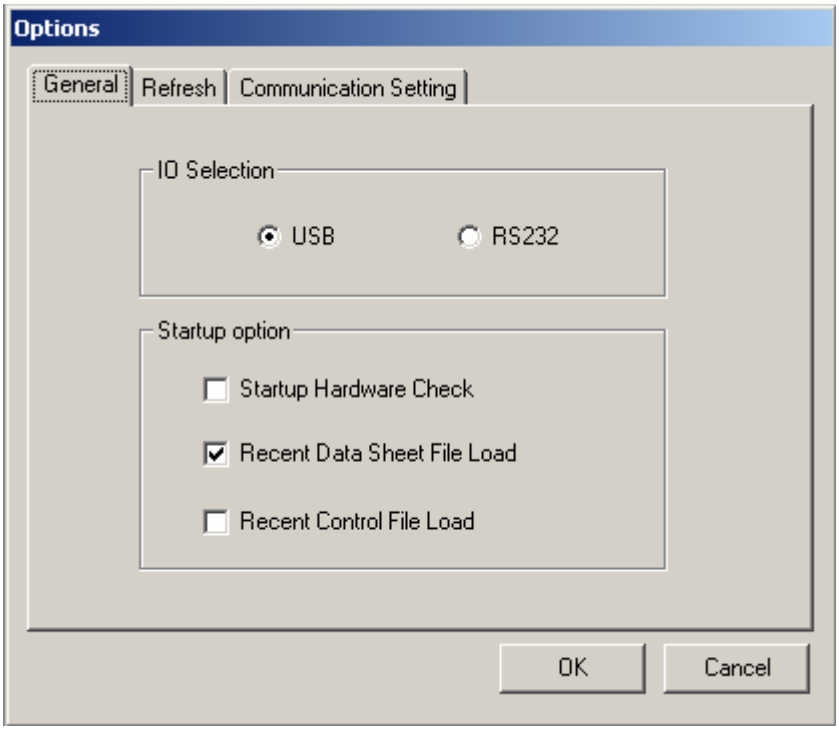


Figure 31: Page 1 in General Options

The general options include 3 pages of settings for I/O selection, startup option, refresh and communication.

I/O Selection

You could select USB or RS-232.

Startup Option

In this section, you could set three operations while the Ultrascope software is starting up.

1. **Startup Hardware Check**: It will check the connection between the oscilloscope and the computer. If the communication is available, it will connect the oscilloscope with PC automatically while the software starting up.

2. **Recent Data Sheet File Load**: It will open the data sheet file that you use last time after the software starts up.

3. **Recent Control File Load**: It will open the control file that you use last time after the software starts up.

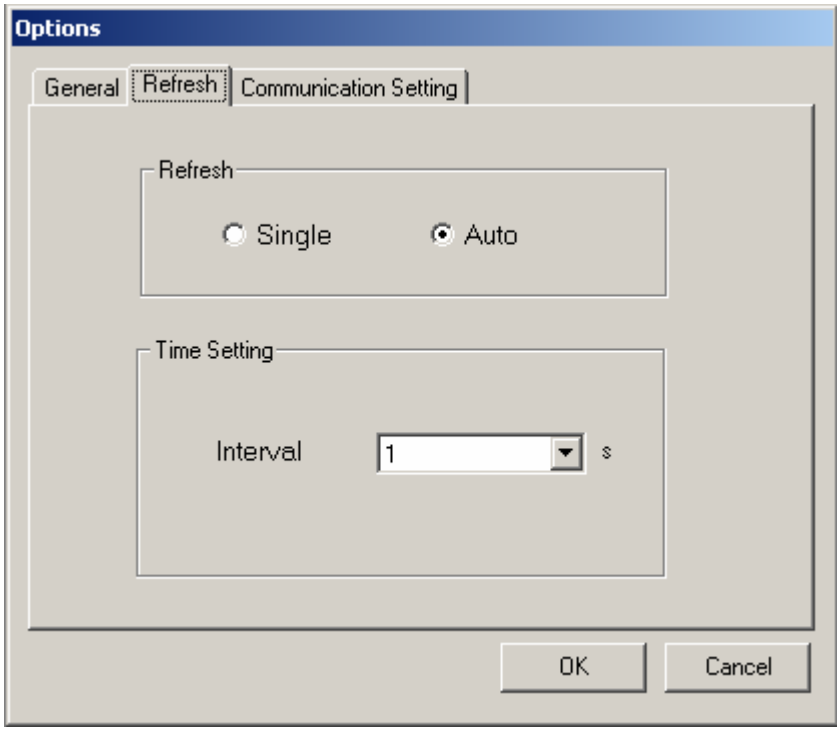


Figure 32: Page 2 in General Options

Refresh

You could select to refresh the waveform or measurement data in single or auto mode.

Time Setting

You could select the refreshing time interval from a list of 1s, 2s, 5s, 10s and 20s. The default value is 1s.

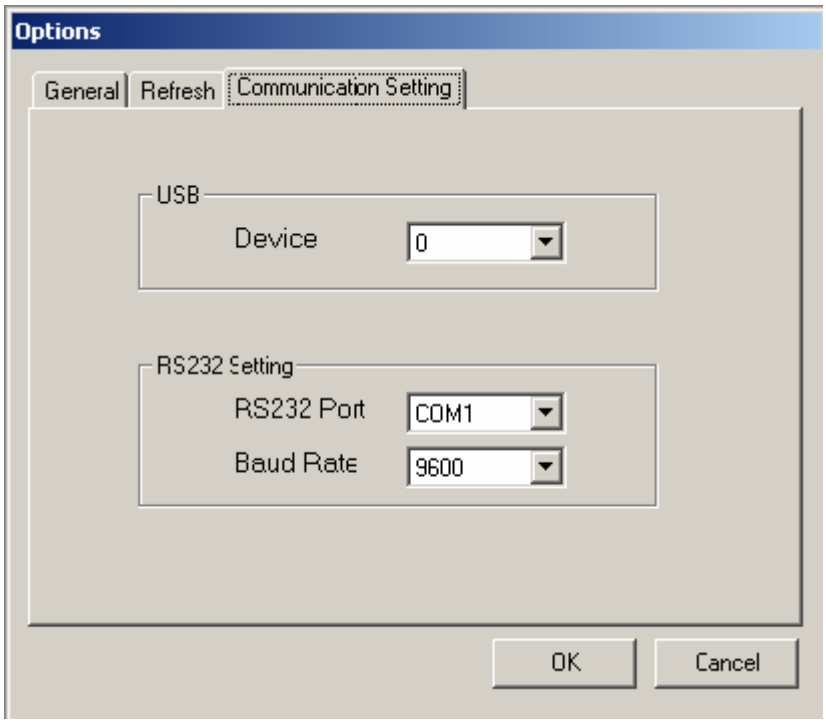


Figure 33: Page 3 in General Options

The communication settings include setups for RS-232 and USB.

RS-232 Setting:

1. **RS232 Port**: You could select the RS-232 port at COM1 or COM2 according to which port you use on your computer.
2. **Baud Rate**: You could select the baud rate from a list of 300, 2400, 4800, 9600, 19200 and 38400. The default value is 9600.

***Note**: The baud rate setting in Ultrascope must be same as the setting at the oscilloscope. Otherwise, the Ultrascope will pop up an error message as " Device not found".*

Chapter 3: Prompting messages and Troubleshooting

Prompting Messages

Device not found: Prompting that the software does not detect the connection between the oscilloscope and the computer.

File not found: Prompting that Ultrascope could not find the control file or data sheet file when starting up.

This Item Query Only: Prompting that this item is only for display the setting or status of the oscilloscope. You could not double-click this item to setup the oscilloscope.

Save the changes to the Control File: Prompting users to save the changes of the control file before quit Ultrascope software.

Save the changes to the Data Sheet File: Prompting users to save the changes of the data sheet file before quit Ultrascope software.

Troubleshooting

1. After running the Ultrascope, the software could not detect the connection between the instrument and the computer. Please inspect the settings of the software and the oscilloscope according to the following steps:

(1) Make sure that the oscilloscope is powered on.
(2) Check the cable connection between the oscilloscope and PC.
(3) Check if the settings for the baud rate of the oscilloscope are same as those of the Ultrascope software. (The default baud rate is 9600.)
(4) After the inspections above, restart the Ultrascope software.
(5) If the problem still remains, please contact RIGOL for help.

Contact RIGOL

Product Support: For questions about using RIGOL measurement products, call in China:
Tel: 86-10-82899325
9:00 a. m.–5: 00 p. m. Beijing time

Or contact us by e- mail:
support@rigol.com
For product support outside of China, contact your local RIGOL distributor or sales office.

For a listing of worldwide service centers, visit our web site.
Web site：www.rigol.com